

WHAT IS CLAIMED IS:

1. A stencil mask comprising:
a conductive thin film with openings in the film;
an insulating film formed in the region of
5 conductive thin film excluding the openings;
a conductive support formed on the insulating
film; and
a conducting member which is formed through the
insulating film and which connects the conductive
10 support and the conductive thin film electrically.
2. The stencil mask according to claim 1, wherein
the electrical conductivity of the conducting member is
equal to or higher than that of each of the conductive
thin film and the conductive support.
- 15 3. The stencil mask according to claim 1, wherein
the conductive thin film and the conductive support are
made of silicon.
4. The stencil mask according to claim 1, wherein
the conducting member is made of tungsten.
- 20 5. The stencil mask according to claim 1, further
comprising silicon or silicide formed on the surface of
the conducting member.
6. The stencil mask according to claim 1, wherein
the conducting member is formed in the conductive
25 support.
7. The stencil mask according to claim 1, wherein
the conducting member is formed in the conductive thin

film.

8. The stencil mask according to claim 1, wherein the conducting member is formed on and in the conductive thin film.

5 9. A stencil mask comprising:

a conductive thin film which has a first region and a second region outside the first region, the first region including a plurality of first openings;

10 an insulating film which is formed in a region corresponding to the second region of a first side of the conductive thin film;

a conductive support which is formed in a region corresponding to the second region of the conductive thin film via the insulating film;

15 a second opening which is formed through the conductive support and the insulating film; and

a conducting member which is provided in the second opening and which connects the conductive thin film and the conductive support electrically.

20 10. The stencil mask according to claim 9, wherein the electrical conductivity of the conducting member is equal to or higher than that of each of the conductive thin film and the conductive support.

25 11. The stencil mask according to claim 9, wherein the conductive thin film and the conductive support are made of silicon.

12. The stencil mask according to claim 9, wherein

the conducting member is made of tungsten.

13. The stencil mask according to claim 9, further comprising silicon or silicide formed on the surface of the conducting member.

5 14. A stencil mask comprising:

 a conductive thin film which has a first region and a second region, the first region including a plurality of first openings;

 an insulating film formed corresponding to the
10 second region of the conductive thin film;

 a conductive support formed on the insulating film;

 a second opening made in the conductive thin film and the insulating film in the second region of the
15 conductive thin film; and

 a conducting member which is formed in the second opening and which connects the conductive thin film and the conductive support electrically.

20 15. The stencil mask according to claim 14, wherein the electrical conductivity of the conducting member is higher than that of each of the conductive thin film and the conductive support.

25 16. The stencil mask according to claim 14, wherein the conductive thin film and the conductive support are made of silicon.

 17. The stencil mask according to claim 14, wherein the conducting member is made of tungsten.

18. The stencil mask according to claim 14,
further comprising silicon or silicide formed on the
surface of the conducting member.

19. A stencil mask comprising:

5 a conductive thin film which has a first region
and a second region, the first region including a
plurality of first openings;

an insulating film formed corresponding to the
second region of the conductive thin film;

10 a conductive support formed on the insulating
film;

a second opening made in the conductive thin film
and the insulating film in the second region of the
conductive thin film; and

15 a conducting member which is formed on the surface
of the conductive thin film and in the second opening
and which connects the conductive thin film and the
conductive support electrically.

20 20. The stencil mask according to claim 19,
wherein the electrical conductivity of the conducting
member is higher than that of each of the conductive
thin film and the conductive support.

25 21. The stencil mask according to claim 19,
wherein the conductive thin film and the conductive
support are made of silicon.

22. The stencil mask according to claim 19,
wherein the conducting member is made of tungsten.

23. The stencil mask according to claim 19,
further comprising silicon or silicide formed on the
surface of the conducting member.

24. A mask forming substrate comprising:

5 a conductive thin film having a first region and a
second region;

an insulating film formed on the conductive thin
film;

10 a conductive support formed on the insulating
film;

an opening made in the conductive support and a
region of the insulating film corresponding to the
second region of the conductive thin film; and

15 a conducting member which is formed in the opening
and which connects the conductive thin film and the
conductive support electrically.

25 25. The mask forming substrate according to
claim 24, wherein the electrical conductivity of the
conducting member is equal to or higher than that of
20 each of the conductive thin film and the conductive
support.

26. The mask forming substrate according to
claim 24, wherein the conductive thin film and the
conductive support are made of silicon.

25 27. The stencil mask according to claim 24,
wherein the conducting member is made of tungsten.

28. A mask forming substrate comprising:

a conductive thin film having a first region and a second region;

an insulating film formed on the conductive thin film;

5 a conductive support formed on the insulating film;

an opening made in the conductive film and a region of the insulating film corresponding to the second region of the conductive thin film; and

10 a conducting member which is formed on the conductive thin film and in the opening and which connects the conductive thin film and the conductive support electrically.

29. A stencil mask manufacturing method
15 comprising:

making a plurality of openings in a first region of a conductive thin film of an SOI substrate which includes a substrate, an insulating film formed on the substrate, and the conductive thin film with the first
20 region and a second region formed on the insulating film;

forming a support by removing the substrate in a region corresponding to the first region of the conductive thin film and the substrate in a part of a
25 region corresponding to the second region of the conductive thin film;

removing the insulating film corresponding to the

first region and second region exposed as a result of the formation of the support; and

forming a conducting member electrically connecting the substrate and the conductive thin film in a region corresponding to the second region from which the insulating film has been removed, the conducting member having a higher electrical conductivity than that of each of the substrate and the conductive thin film.

30. A stencil mask manufacturing method comprising:

making first openings in a first region of and a second opening in a second region of a conductive thin film of an SOI substrate which includes a substrate, an insulating film formed on the substrate, and the conductive thin film with the first region and the second region formed on the insulating film;

forming a support by removing the substrate in a region corresponding to the first region;

removing the insulating film exposed as a result of the formation of the support; and

forming a conducting member in the second opening of the conductive thin film, the conducting member having a higher electrical conductivity than that of each of the substrate and the conductive thin film.

31. A stencil mask manufacturing method comprising:

forming a concave portion in which an insulating film is exposed in a region corresponding to a second region of a substrate of an SOI substrate which includes the substrate, an insulating film formed on the substrate, and a conductive thin film with a first region and the second region formed on the insulating film;

removing the exposed insulating film;

forming a conducting member in the concave portion, the conducting member having a higher electrical conductivity than that of each of the substrate and the conductive thin film;

making openings in a region corresponding to the first region of the conductive thin film; and

removing the substrate and insulating film corresponding to the first region.

32. A mask forming substrate manufacturing method comprising:

forming a concave portion by removing a substrate and an insulating film corresponding to a second region of an SOI substrate which includes the substrate, the insulating film formed on the substrate, and a conductive thin film formed on the insulating film and having a first region as an opening formation region and the second region around the first region; and

forming a conducting member in the concave portion, the conducting member having a higher

electrical conductivity than that of each of the substrate and the conductive thin film.

33. A stencil mask manufacturing method comprising:

5 making a first opening by removing a conductive thin film and an insulating film corresponding to a second region of an SOI substrate which includes a substrate, the insulating film formed on the substrate, and the conductive thin film with a first region and
10 the second region formed on the insulating film;

 forming a conducting member in the entire surface of the conductive thin film and in the first opening, the conducting member having a higher electrical conductivity than that of each of the substrate and the
15 conductive thin film;

 making a second opening by removing the conducting member and the conductive thin film corresponding to the first region; and

 forming a support by removing the substrate and
20 insulating film corresponding to the first region.

34. A mask forming substrate manufacturing method comprising:

 making a first opening by removing a conductive thin film and an insulating film corresponding to a
25 second region of an SOI substrate which includes a substrate, the insulating film formed on the substrate, and the conductive thin film with a first region and

the second region formed on the insulating film; and

forming a conducting member in the entire surface
of the conductive thin film and in the first opening,
the conducting member having a higher electrical

5 conductivity than that of each of the substrate and the
conductive thin film.

35. A mask forming substrate comprising:

a conductive thin film having a first region and a
second region;

10 an insulating film formed on the conductive thin
film;

a conductive support formed on the insulating
film;

15 an opening formed in the conductive thin film
corresponding to the second region and the insulating
film; and

a conductive member which is formed in the opening
and which connects the conductive thin film and the
conductive support electrically.